

## **METHOD FOR TRANSFORMING PHASE SPECTRA TO ABSORPTION SPECTRA**

### Abstract of the Disclosure

A device and method for determining analyte concentrations within a material sample are provided. A modulating temperature gradient is induced in the sample and resultant, emitted infrared radiation is measured at selected analyte absorbance peaks and reference wavelengths. The modulating temperature gradient is controlled by a surface temperature modulation. One embodiment provides a transfer function relating the surface temperature modulation to a modulation of the measured infrared radiation. Phase and magnitude differences in the transfer function are detected in the presence of the sought-after analyte. These phase and magnitude differences, having a relationship to analyte concentration, are measured, correlated and processed to determine analyte concentration in the material sample. Another embodiment provides a method for transforming thermal phase spectra to absorption spectra for consistent determination of analyte concentration within the sample.

### **PATENT**

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